I claim:

1. A DNA sequence encoding TRELL or a fragment thereof.

2. A DNA sequence encoding TRELL, said sequence consisting essentially of SEQ. ID. NO. 1 or SEQ. ID. NO. 3.

5   3. A DNA sequence consisting essentially of SEQ. ID. NO. 1 or SEQ. ID. NO. 3, said DNA encoding a polypeptide, said polypeptide consisting essentially of SEQ. ID. NO. 2 or SEQ. ID. NO. 4.

4. A DNA sequence that hybridizes to at least a fragment of SEQ. ID NO. 1 or SEQ. ID NO. 3, said fragment comprising at least 20 consecutive bases, said
10   DNA sequence encoding a polypeptide that is at least 30% homologous with an active site of TRELL.

5. A DNA sequence according to claim 2 wherein said sequence consists essentially of SEQ. ID. NO. 1 or SEQ. ID. NO. 3 with conservative substitutions, alterations or deletions.

15 6. A recombinant DNA molecule comprising a DNA sequence encoding TRELL, said sequence operatively linked to an expression control sequence.

7. The molecule of claim 6 comprising SEQ. ID. NO. 1 or SEQ. ID. NO. 3.

8. A host transformed with a recombinant DNA molecule of claim 6 or 7.

9. A DNA sequence encoding TRELL having the amino acid sequence of SEQ. ID. NO. 2 or SEQ. ID. NO. 4.

10. A method for producing substantially pure TRELL comprising the step of culturing the unicellular host of claim 8.

11. TRELL essentially free of normally associated animal proteins.

12. The TRELL of claim 11 consisting essentially of SEQ. ID. NO. 2 or SEQ. ID. NO. 4.

13. A pharmaceutical composition comprising a therapeutically effective amount of TRELL or an active fragment thereof, and a pharmaceutically acceptable

5   carrier.

14. A method for preventing or reducing the severity of an autoimmune disease comprising the step of administering a therapeutically effective amount of a pharmaceutical composition according to claim 13.

15. The pharmaceutical composition of claim 13 wherein said TRELL or active
10   fragment thereof comprises SEQ. ID. NO. 2, or SEQ. ID. NO. 4, or a biologically active fragment thereof.

16. A method for preventing or reducing the severity of an immune response to a tissue graft comprising the step of administering a therapeutically effective amount of a pharmaceutical composition according to claim 13.

15 17. A method for stimulating the immune system comprising administering the composition of claim 13.

18. A method for suppressing the immune system comprising administering an effective amount of the pharmaceutical composition according to claim 13.

19. A method for treating cancer comprising administering a therapeutically
20   effective amount of the pharmaceutical composition according to claim 13.

20. A method for identifying a receptor for TRELL comprising:

    a.   providing TRELL or a fragment thereof,

    b.   labeling said TRELL or fragment thereof with a detectable label;

    c.   screening a composition to detect receptors which bind to the detectably
25   labeled TRELL of step b.

21. A soluble biologically active fragment of the TRELL of claim 11.

22. A polypeptide comprising an amino acid sequence that is encoded by a DNA selected from the group consisting of:

    a.   a DNA sequence comprising SEQ. ID. NO. 1 or SEQ. ID. NO. 3;

    b.   a DNA sequence that hybridizes to the DNA defined in a. and coding on

5   expression for a polypeptide that is at least 40% homologous with the TRELL of claim 12.

23. An antibody preparation that is reactive to TRELL or its receptor or biologically active fragments thereof.

10   24. The antibody preparation of claim 23 comprising monoclonal antibodies.

25. A method for producing an antibody preparation reactive to TRELL or its receptor comprising the step of immunizing an organism with TRELL or its receptor, or an antigenic fragment thereof.

26. An antisense nucleic acid against TRELL comprising a nucleic acid sequence hybridizing to at least a portion of SEQ. ID. NO. 1 or SEQ. ID. NO. 3.

15

27. A pharmaceutical composition comprising an antibody preparation according to claim 24.

Sub c6   28. A method of expressing a gene in a mammalian cell comprising:

    a.   introducing a gene encoding TRELL into a cell;

20   b.   allowing said cell to live under conditions such that said gene is expressed in said mammal.

29. A method of treating a disorder related to TRELL in a mammal

    a.   introducing into a cell a therapeutically effective amount of a vector comprising a gene encoding TRELL; and

25   b.   expressing said gene in said mammalian cell.

Sub c7   30. The method of claim 29 wherein the mammal is a human.

31.   The method of claim 29 wherein said vector is a virus.

32.   A method of inducing cell death comprising the administration of an agent capable of interfering with the binding of TRELL to a receptor.

33.   The method of claim 32 further comprising the administration of intefereon-γ.

5   34.   A method of treating, suppressing or altering an immune response involving a signalling pathway between TRELL and its receptor, said method comprising the step of administering an effective amount of an agent capable of interfering with the association between TRELL and its receptor.

35.   The method of claim 35 wherein said immune response involves human

10   adenocarcinoma cells.

Add
D3

add E6